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### REMARKS

Applicants respectfully request reconsideration and allowance in view of the following remarks.

In the Office Action, claim 28 stands rejected under 35 U.S.C. § 102 as allegedly anticipated by U.S. Patent No. 4,973,159 to Sohma et al. ("Sohma"), claims 31-32 stand rejected under 35 U.S.C. § 102 as allegedly anticipated by U.S. Patent No. RE 32,598 to White ("White-RE") and claims 56-65 stand rejected under 35 U.S.C. § 102 as allegedly anticipated by U.S. Patent No. 3,825,762 to White ("White-762")

Claims 29-30 stand rejected under 35 U.S.C. § 103 as allegedly being unpatentable over Sohma in view of U.S. Patent No. 5,233,405 to Wildnauer et al ("Wildnauer"), claim 33 stands rejected under 35 U.S.C. § 103 as allegedly being unpatentable over White-RE in view of U.S. Patent No. 4,355,871 to Nevyas et al ("Nevyas") and Claims 35-36 stand rejected under 35 U.S.C. § 103 as allegedly being unpatentable over White-RE in view of Wildnauer.

Claims 1-22, and 28-69 are pending.

### **Double-Patenting Rejections**

Applicants note that claims 1-19, 28, 31-50, 56 and 59 are all rejected under the judicially create doctrine of obviousness-type double patenting. When Applicants receive a Notice of Allowance, the appropriate terminal disclaimers will be filed.

### **Rejections under 35 U.S.C. §102(b)**

Turning now to the asserted references, claim 28 stands rejected as anticipated by Sohma, claims 31-32 stand rejected as anticipated by White-RE, and claims 56-65 stand rejected as anticipated by White '762. To anticipate a pending claim under 35 U.S.C. § 102(b), a reference must specifically teach every element recited in the pending claim, or at least inherently include every such element (*see*, MPEP §§2131 and 2131.01). In that regard, Applicants submit that the Sohma patent and the White patents are deficient and, accordingly, the § 102 rejections are improper.

Sohma

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Regarding claim 28 and with particular respect to the Sohma reference, Applicants respectfully submit that Sohma does not teach, *inter alia*, a second optical grating positioned to disperse at least part of the light passed through the first selection aperture as required by claim 28. The suggestion in the Office Action that Sohma teaches a second dispersing optical grating is clearly refuted by the description of Figure 1 in Sohma that states: "second spectroscope 4 of FIG. 1 is disposed so as to perform a light mixing function" (*see, e.g.* Sohma, column 13, lines 35-49). Specifically, Sohma teaches that:

"...the light dispersing grating 11a diffracts wavelength components of incident light in different directions. If the incident light on and the diffracted light from the grating 11a are propagated in reverse directions, the grating will function as a light mixing element."

(Sohma, column 13, lines 20-25). Sohma subsequently describes the grating purported in the Office Action to be a dispersing grating as "a *light mixing grating* 11b." (Col. 13, lines 44-48, emphasis added). This mixing function is clearly shown in FIG. 2 of Sohma, where the light incident on the second optical component 11b is combined or mixed as it is transmitted to the mirror 16. Clearly then, the Sohma reference, as cited in the Office Action, contradicts the Examiner's assertion that Sohma teaches the second optical grating positioned to disperse at least part of the light passed through the first selection aperture recited in claim 28.

It will be further appreciated that Sohma teaches a dual grating image forming monochromator that does not pass selected wavelengths of monochromatic light, but rather mixes light reflected off the first grating to form an image of the full spectrum, *i.e.*, the Sohma apparatus functions as an image forming spectroscope. Specifically, the intermediate and outlet slits (reference numerals 3 and 19, respectively) and the second grating (11b) taught in Sohma combine to mix light from the first grating (11a) to form an image of the full spectrum of the incident light that enters through the inlet slit (15). In contrast, both optical gratings as described in the present application and as recited in claim 28 are operative to intercept and "to disperse" light passed through the entrance slit and the first selection slit, respectively.

As a consequence of its construction and the interrelationship between the components, the Sohma apparatus cannot isolate and transmit light of a single wavelength, and therefore cannot function as a monochromator as contemplated and claimed in the present application. Nor does Sohma teach a second optical grating positioned to disperse at least part of the light passed through the first selection aperture. Accordingly, Sohma neither teaches nor suggests the

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subject matter recited in pending claim 28, and the rejection of this claim is improper. Applicants submit that claim 28 is allowable at least for the reasons set forth above.

#### White-RE

Regarding claims 31-32, the Office Action asserts, without specific citation, that White-RE teaches each and every element of claims 31 and 32. Applicants respectfully disagree. For example, claim 31 requires an emission mirror positioned substantially coaxial with the area to be illuminated; wherein the emission mirror is operative to focus and to direct light emitted by the illuminated area as emission light. In contrast, White-RE teaches that a "portion of the emitted fluorescence is collected by a spherical lens 33 and is directed thereby through a cylindrical lens 34 to a spherical off-axis mirror 35 and a flat off-axis mirror 36." (See col. 4, lines 28-32, emphasis added). Clearly then, White-RE does not teach the required substantially *coaxial* emission mirror and, neither does White-RE teach a mirror that is operative to direct and focus emission light.

Even if the Examiner intended to cite mirror 32 of FIG. 1 in White-RE as teaching the emission mirror of claim 31, it is readily apparent that White-RE fails to anticipate the recited emission mirror. Applicants note that the White-RE mirror (32) of FIG. 1 has counterparts in other figures of White-RE, all of which perform a common function as described below:

To provide a further increase in the intensity of the light beam passing through the sample 25, a spherical mirror 32 is located a short distance behind the sample adjacent the sample surface 27 opposite that facing the excitation monochromator 13. The mirror 32 directs the excitation beam back through the sample for a second pass.

(White-RE, col. 4, lines 18-24). Thus, the mirror 32 in White-RE is used to enhance the excitation light provided to a sample, and a lens is used to focus and direct emitted light. Applicants submit that this description clearly undermines the contention in the Office Action that White-RE teaches an emission mirror positioned substantially coaxial with the area to be illuminated and operative to focus and direct light emitted by the illuminated area as recited in the claims. Therefore, for at least these reasons, the rejections of claims 31 and 32 are improper and should be withdrawn.

Applicants further disagree that White-RE teaches the excitation mirror as recited in claim 31, but in the absence of an explicit citation by the Examiner and in the interest of

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prosecution efficiency, Applicants defer further argument to a later date should such argument be necessary.

### White 3,825,762

Regarding claims 56-65, Applicants are uncertain as to which Patent the Office Action intended to cite in rejecting these claims. U.S. Patent No. 3,825,760 to Fletcher et al. is directed to a flame detector operable in the presence of proton radiation, apparently with particular application in Aerospace applications. A search of the USPTO database yields no solid alternative candidate Patents by White and the Notice of References Cited of April 11 2005 is uninformative. Therefore, Applicants respond under the assumption that the intended citation refers to a Patent in the same family as White-RE.

In the Office Action, the Examiner asserts that White-762 teaches the first and second double monochromators recited in claim 56. Applicants respectfully disagree. Figure 3 of White-RE shows an excitation monochromator 63 and an emission monochromator 110. However, the claims require a double emission monochromator such as the example provided in Figure 2A of the present Application. It will be appreciated that a double monochromator employs two monochromators (that may share a common aperture 206), whereas White-RE does not teach or suggest such a combination of monochromators. Further, Fig. 3 of White-RE does not contain a mathematically sufficient number of monochromators to construct first and second double monochromators. Therefore, it cannot be reasonably said the White-762 teaches each and every element of claim 56 and that claims 57-65 are necessarily also allowable since claim 56 is clearly patentable over the cited art.

Therefore, for at least these reasons and in absence of a precise citation to relevant references, Applicants respectfully submit that the rejections of claims 56-65 are improper and should be withdrawn.

### **35 U.S.C. §103(a) Rejections**

As set forth above, claims 29-30 stand rejected as allegedly being unpatentable over Sohma in view of Wildnauer, claim 33 stands rejected as allegedly being unpatentable over

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White-RE in view of Nevyas and claims 35-36 stand rejected as allegedly being unpatentable over White-RE in view of Wildnauer.

Given the foregoing deficiencies of the individual primary references asserted by the Examiner, Applicants respectfully submit that the claim rejections based upon 35 U.S.C. §103(a) are improper, and that an ordinarily skilled artisan would not have been motivated to combine the references in the manner suggested by the Examiner.

For example, the Sohma reference is directed particularly to a single, dual grating imaging monochromator. Specifically, the second grating in Sohma's image forming monochromator "mix[es] that part of the spectral components which exists in a desired wavelength range" in a system and method of "forming a mixed light image" (*see, e.g.* column 22, lines 48-51). Hence, the Sohma disclosure teaches a single, dual grating, collimating imaging monochromator which produces an image of a complete emission spectrum for light generated by an external and independent polychromatic light source; the Sohma apparatus cannot be used as a wavelength monochromator. Accordingly, the Sohma disclosure fails to teach or even to suggest the subject matter recited in any of claims 1-22 and 28-69. Applicants respectfully submit that the rejection of claims 29-30 is improper at least to the extent that the Examiner relies upon the teachings of the Sohma reference; Sohma fails to teach a monochromator as described and claimed in the present application.

Nor does Wildnauer or Nevyas cure the deficiencies of the Sohma and Smith-RE references. Wildnauer merely provides a means for avoiding the effects of polarization in a two pass scanner. Wildnauer is directed to reducing the effect of polarization on the amplitude of the output light and requires different polarizations for two passes. (*See* paragraph spanning cols. 3-4). There would have been no suggestion apparent in Wildnauer to provide first and second polarizing filters as required in the claims of the present Application since Wildnauer teaches two passes in which different polarization will be used for each pass. Nor is there motivation to provide first and second polarizing filters because the use of such filters would necessarily have an impact on the amplitude of output light due to the different paths traveled. Similarly, Nevyas is directed to optical beam splitting and rotating for the purpose of creating multiple images of an optical target. (*See* Nevyas Abstract). Nevyas provides no instruction regarding excitation, emission or fluorescent light. Nevyas is clearly a dissimilar application and there would have

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been no motivation for one of ordinary skill in the art to look to Nevyas' surgical device to resolve problems in the area of monochromators.

Applicants respectfully submit that the Nevyas and Wildnauer references do not cure the deficiencies identified in Sohma and the Smith references and that no motivation would have existed to combine the cited art as suggested by the Examiner. Therefore, Applicants respectfully submit that, for at least the foregoing reasons, the §103 rejections of claims 29-30, 33 and 35-36 are improper and should be withdrawn.

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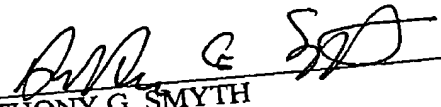
### Conclusion

All objections and rejections having been addressed, it is respectfully submitted that the present application is in a condition of allowance and a Notice to that effect is earnestly solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

Please charge any fees associated with the submission of this paper to Deposit Account Number 502212. The Commissioner for Patents is also authorized to credit any over payments to the above-referenced Deposit Account.

Respectfully submitted,

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### CERTIFICATION UNDER 37 C.F.R. §§ 1.8 and/or 1.10\*

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I hereby certify that, on the date shown below, this paper (along with any paper referred to as being attached or enclosed) is being facsimile transmitted to the Patent and Trademark Office, (571) 273-8300.

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